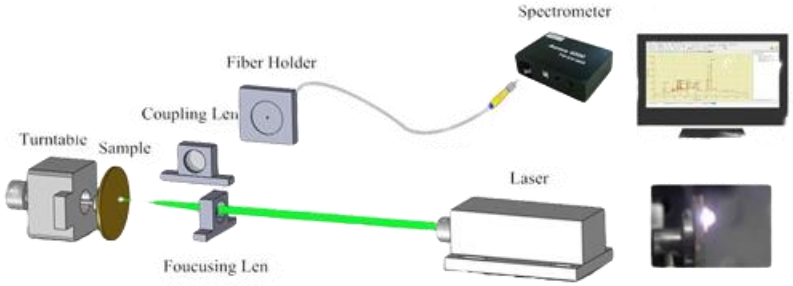
Laser Induced Breakdown Spectroscopy System

Laser induced breakdown spectroscopy (LIBS) is a detection technology that uses pulsed laser to cauterize substances to produce plasma, and uses plasma emission spectroscopy to qualitatively or quantitatively analyze the element composition of substances. In this technology, the transient plasma is generated by the interaction between high-power density laser and material, and the atomic and ion emission spectra in the plasma are collected by optical system. The qualitative or quantitative analysis of chemical elements is realized by analyzing the spectral information.

Features

- Coaxial design of excitation optical path and acquisition optical path
- Internal control/ external control dual mode
- Output Q signal synchronously
- Two-dimensional precision adjustment platform is installed in the sample room
- The height of the lifting platform can be adjusted to realize the detection of samples of different sizes
- Integrated system design and simple operation



Laser Selection

Solid Substance LIBS Detection	Metal sample (e.g., metal, alloy, steel, mineral, etc.)	High energy pulse laser E:100μJ~10mJ	The sample has good thermal conductivity, and the laser energy is high enough.
	Non metallic multi component sample (e.g.,heavy metals in soils, NPK fertilizer detection, coal quality analysis etc.)	Low frequency high energy pulse laser E:10mJ~100mJ	The thermal conductivity of the sample is not good, the high temperature will lead to chemical reaction or burning.
Liquid Substance LIBS Detection	Liquid sample (e.g., sea water, industrial waste water detection, etc.)	High energy pulse laser E:100mJ~500mJ	Due to the plasma shock wave action, the liquid level fluctuation will affect the detection stability.
Gaseous Substance LIBS Detection	Gases and aerosols (e.g., air, air pollutants, automobile exhaust, industrial waste gas, etc.)	Low frequency high energy pulse laser E:500mJ~1000mJ	Gas breakdown threshold is high, need high energy laser as the excitation light source.

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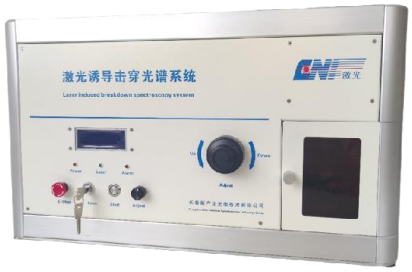
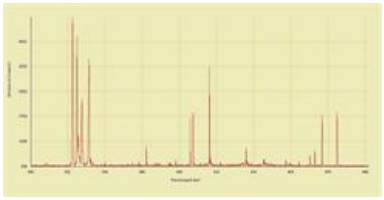


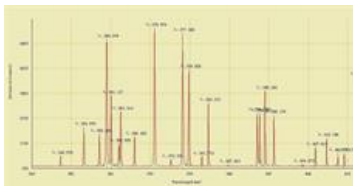
Manual lifting platform/translation platform

Electric lifting platform/translation platform

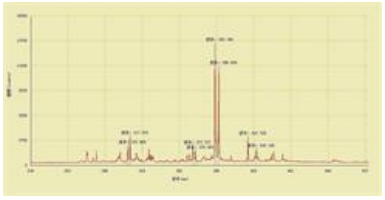
Sample LIBS Spectrum



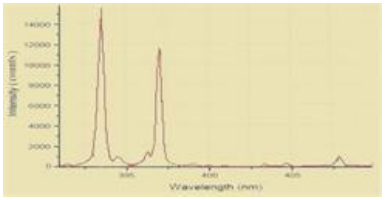
Copper-aluminum alloy LIBS spectrum



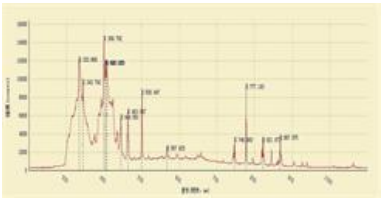
Cr: YAG LIBS spectrum



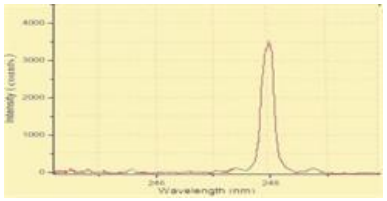
Granite LIBS spectrum



Plant leaves LIBS spectrum



Air LIBS spectrum



Soil LIBS spectrum

LIBS system test software —

LIBS exe

Accessories

Spectrometer

Coupling System

Remote Control

Synchronizing

Laser Goggle